AMENDMENTS TO THE CLAIMS

1. - 65. (Canceled)

66. (Currently Amended) A method of controlling the condition of a suspension of solid particles within a liquid including applying one or more stimuli to said suspension, said one or more stimuli adapted to control inter-particle forces between said solid particles, wherein each stimulus is selectively operable to effect reversibly operable conditioning between an initial state prevailing prior to said applying one or more stimuli and a conditioned state resultant from said applying one or more stimuli, thereby to control interaction between said solid particles within said liquid, said stimulus being applied for a predetermined time thereby to liberate at least some liquid otherwise trapped among said solid particles of said suspension.

67. (Previously Presented) A method of controlling the consolidation of a bed of solid particles within a liquid including applying one or more stimuli to said bed, said one or more stimuli adapted to control inter-particle forces between said solid particles, wherein each stimulus is selectively operable to effect reversibly operable conditioning between an initial state prevailing prior to said applying one or more stimuli and a conditioned state resultant from said applying one or more stimuli, thereby to control interaction between said solid particles within said liquid, said stimulus being applied for a predetermined time thereby to liberate at least some liquid otherwise trapped within said bed.

68. (Previously Presented) A method according to claim 66 or claim 67, wherein said reversibly operable conditioning is facilitated by removal of said one or more stimuli, and/or by addition of another of said one or more stimuli.

69. (Previously Presented) A method according to claim 66 or claim 67, wherein said reversibly operable conditioning is facilitated substantially by way of flocculation and/or coagulation.

70. (Previously Presented) A method according to claim 66 or claim 67, wherein said inter-particle forces may be attractive or repulsive between said solid particles within said liquid.

71. (Previously Presented) A method according to claim 66 or claim 67, wherein each of said one or more stimuli is applied for a predetermined time, thereby to induce the desired attraction or repulsion and subsequently removed or altered, thereby to effect said reversibility.

72. (Previously Presented) A method according to claim 66 or claim 67, wherein said one or more stimuli comprise a change in pH, temperature, wavelength of light or the absence thereof,

chemical additive, or a combination thereof, thereby to induce attractive or repulsive inter-particle forces, as desired.

73. (Previously Presented) A method according to claim 72, wherein said light includes wavelengths within the range of substantially ultraviolet to substantially visible.

74. (Previously Presented) A method according to claim 72, wherein said light stimulus is applied in combination with variations in pH and/or temperature.

75. (Previously Presented) A method according to claim 72, wherein said chemical additive is a single chemical capable of acting as flocculant or dispersant depending on the selection of predetermined process parameters.

76. (Previously Presented) A method according to claim 72, wherein said chemical additive is in the form of a photosensitive flocculant.

77. (Previously Presented) A method according to claim 72, wherein said chemical additive is a stimulus-sensitive polymer.

78. (Previously Presented) A method according to claim 77, wherein said stimulus-sensitive polymer is a polyelectrolyte.

79. (Previously Presented) A method according to claim 78, wherein said polyelectrolyte maybe cationic, anionic, non-ionic, or a combination thereof.

80. (Previously Presented) A method according to claim 78, wherein said polyelectrolyte is adsorbable onto the surface of said solid particles in a sufficient quantity as to create steric or electrostatic repulsion between said particles.

81. (Previously Presented) A method according to claim 78, wherein said polyelectrolyte is substantially soluble at pH values where it is substantially charged, thereby to effect dispersion of said suspension and/or wherein said polyelectrolyte is substantially insoluble at pH values where it is substantially uncharged, thereby to effect flocculation of said suspension.

82. (Previously Presented) A method according to claim 78, wherein said polyelectrolyte is selected from the group consisting of chitosan, polyacrylic acid, polyacrylamides and derivatives thereof, polymethacrylic acid, poly sodium acrylate, polystyrene sulfanate, polysulfanamide, poly(2-vinyl pyridine), poly(vinylpyridinium bromide), poly(diallyldimethylammonium chloride)(DADMAC), poly(diethylamine), poly(epichlorohydrin), polymers of quarternised dimethylaminoethyl acrylates, polymers of quarternised dimethylaminoethyl acrylamides, poly(ethyleneimine), polyglucose amine, homo- and copolymers prepared from ethylenic unsaturated

monomers including methacrylic acid and salts thereof, methacrylamide, acrylamido methyl propyl sulfonic acid (AMPS) and/or styrene sulfanate and salts thereof.

83. (Previously Presented) A method according to claim 78, wherein said polyelectrolyte is chitosan or polyacrylic acid.

84. (Previously Presented) A method according to claim 78, wherein said polyelectrolyte is a polysaccharide.

85. (Previously Presented) A method according to claim 84, wherein said polysaccharide is selected from the group consisting of xanthan, carragenan, agarose, agar, pectin, guar gum, starches and alginic acid, or said polysaccharide is a derivatised polysaccharide selected from the group consisting of carboxy methyl cellulose and hydroxy propyl guar.

86. (Previously Presented) A method according to claim 77, wherein said polymer is temperature-sensitive.

87. (Previously Presented) A method according to claim 86, wherein said temperature sensitivity is such that said polymer is substantially soluble or substantially insoluble at substantially low temperatures and/or said polymer is substantially insoluble (thereby to gel) or substantially soluble, at substantially high temperatures.

88. (Previously Presented) A method according to claim 86, wherein said temperature sensitive polymer is selected from the group consisting of poly(N-isopropylacrylamide) (poly(NIPAM)), co-polymers of poly(NIPAM) with other polymers such as polyacrylic acid, poly(dimethylaminopropylacryl-amide) or poly(diallyldimethylammonium chloride) (DADMAC), polyethylene oxide, poly propylene oxide, methylcellulose, ethyl hydroxyethyl cellulose, carboxymethyl cellulose, hydrophobically modified ethyl hydroxyethl cellulose, poly dimethylacrylamide/N-4-phenylazophenyl-acrylamide (DMAAm) and poly dimethylacrylamide/ 4-phenylazophenyl-acryate (DMAA) and other related polymers, gelatine, agarose, amylase, agar, pectin, carragenan, xanthan gum, guar gum, locust bean gum, hyaluronate, dextran, starches and alginic acid.

89. (Previously Presented) A method according to claim 86, wherein said temperature sensitive polymer is methylcellulose or poly(NIPAM).

90. (Previously Presented) A method according to claim 72, wherein said chemical additive is a photosensitive molecule, incorporated within one or more polymers, at least one which is a water-soluble polymer.

91. (Previously Presented) A method according to claim 90, wherein said polymers suitable for the inclusion of photosensitive units include polypeptides comprising lysine and glutamic acid.

92. (Previously Presented) A method according to claim 90, wherein said polymer is selected from the group consisting of polyacrylamides, polysaccharides, polyelectrolytes and other water-soluble molecules.

93. (Previously Presented) A method according to claim 90, wherein said photosensitive units are spyropyrans, spyrooxazines, azo benzene and similar groups, triphenyl methane derivatives and/or similar groups.

94. (Previously Presented) A method according to claim 93, wherein said spyropyrans and/or spyrooxazines are selected from the group consisting of benzoindolino pyranospiran (BIPS), benzoindolino spyrooxazine (BISO), naphthalenoindolino spyrooxazine (NISO) and quinolinylindolino spyrooxazine (QISO).

95. (Previously Presented) A method according to claim 90, wherein said polymers responsive to said change in wavelength are selected from the group consisting of poly dimethylacrylamide/N-4-phenylazophenylacrylamide (DMAAm), poly dimethylacrylamide/ 4-phenylazophenylacryate (DMAA) and similar polymers.

96. (Previously Presented) A method according to claim 72, wherein said chemical additive is one or more copolymers added to said suspension.

97. (Previously Presented) A method according to claim 96, wherein component monomers within said copolymer may be dispersed randomly, alternately or in AB blocks, ABA blocks, ABC blocks, comb, ladder, and/or star copolymers.

98. (Previously Presented) A method according to claim 97, wherein said block copolymer includes sectors that variously adsorb to said surface of said particles in suspension, and/or are sensitive to a stimulus.

99. (Previously Presented) A method according to claim 98, wherein said copolymers are selected from the group consisting of polyethyleneoxide-polypropyleneoxide-polyethyleneoxide (PEO/PPO/PEO) triblock copolymers.

100. (Previously Presented) A method according to claim 99, wherein said PEO/PPO/PEO triblock copolymer is a Pluronics polymer.

101. (Previously Presented) A method according to claim 96, wherein said copolymer includes one or more polypropylene oxide sectors, thereby to adsorb particularly to hydrophobic

particles, and one or more polyethylene oxide sectors thereby to provide inter-particular steric repulsion at substantially room temperature.

102. (Previously Presented) A method according to claim 96, wherein said copolymer(s) are comb copolymer(s), thereby having a polyacrylic acid backbone that enhances said surface adsorption, and polyethelyne oxide teeth that are stimulus-sensitive.

103. (Previously Presented) A method of separating solid particles from a liquid including applying the method according to claim 66 or claim 67, for a predetermined time thereby to provide a solids-rich phase and a liquids-rich phase and then separating said two phases.